

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

ESSENDON (AUSTRALIA)

Altitude: 86 m.

Latitude: 37°44'S Longitude: 144°54'E

Temperature observation period.: 1905-1994 (90)

Rainfall observation period....: 1906-1994 (89)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	19.73	25.56	13.89	45.56	5.56	48.3	108.86
Feb.	19.73	25.56	13.89	43.33	4.44	45.7	92.31
Mar.	18.34	23.89	12.78	41.67	2.78	55.9	83.61
Apr.	15.28	20.00	10.56	35.00	1.67	58.4	55.43
May.	12.50	16.67	8.33	28.89	-1.11	53.3	38.49
Jun.	10.28	13.89	6.67	22.22	-2.22	53.3	26.48
Jul.	9.45	13.33	5.56	20.56	-2.78	48.3	24.83
Aug.	10.56	15.00	6.11	25.00	-2.22	48.3	32.03
Sep.	12.50	17.22	7.78	31.67	-1.67	58.4	44.24
Oct.	14.17	19.44	8.89	36.67	0.00	66.0	60.75
Nov.	16.12	21.67	10.56	41.11	2.22	58.4	76.79
Dec.	18.06	23.89	12.22	43.89	3.89	58.4	97.76
Year	14.73	19.68	9.77	34.63	0.88	653	741.59

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	336
Compensated thermicity index.....(Itc):	336
Simple continentality index.....(Ic):	10.3
Diurnality index.....(Id):	11.7
Annual ombrothermic index.....(Io):	3.69
Monthly estival ombrothermic index.....(Ios1):	2.32
Bimonthly estival ombrothermic index.....(Ios2):	2.38
Threemonthly estival ombrothermic index.....(Ios3):	2.65
Fourmonthly estival ombrothermic index.....(Ios4):	2.86
Annual ombro-evaporation index.....(Ioe):	0.99
Annual positive temperature.....(Tp):	1767
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	575
Positive precipitation.....(Pp):	653

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	6	6	0	0	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Hyperoceanic - Low Subhyperoceanic

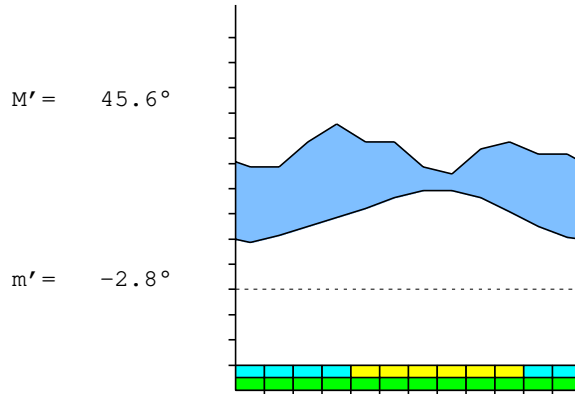
Bioclimate(Variant): TEMPERATE HYPEROCEANIC (SUBMEDITERRANEAN)

Bioclimatic Belt...: UPPER THERMOTEMPERATE LOW SUBHUMID

ESSENDON (AUSTRALIA)

86 m

P= 653      37° 44' S      144° 54' E      90/89 y.  
 T= 14.7°    Ic= 10.3      Tp= 1767      Tn= 0  
 m= 5.6°      M= 13.3°      Itc= 336      Io= 3.7



TEMPERATE HYPEROCEANIC (SUBMEDITERRANEAN)  
 UPPER THERMOTEMPERATE LOW SUBHUMID

WATER INDEX CARD      ESSENDON (AUSTRALIA)  
 Altitude: 86 m.      Latitude: 37° 44' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	9.4	25	48	23	68	25	0	0	0	0.9
Aug.	10.6	32	48	16	84	32	0	0	0	0.5
Sep.	12.5	44	58	14	98	44	0	0	0	0.3
Oct.	14.2	61	66	2	100	61	0	4	2	0.0
Nov.	16.1	77	58	-18	82	77	0	0	1	-0.2
Dec.	18.1	98	58	-39	42	98	0	0	0	-0.4
Jan.	19.7	109	48	-42	0	91	18	0	0	-0.5
Feb.	19.7	92	46	0	0	46	47	0	0	-0.5
Mar.	18.3	84	56	0	0	56	28	0	0	-0.3
Apr.	15.3	55	58	3	3	55	0	0	0	0.0
May.	12.5	38	53	15	18	38	0	0	0	0.3
Jun.	10.3	26	53	27	45	26	0	0	0	1.0
Year	14.7	742	653	*	*	649	93	4	4	*

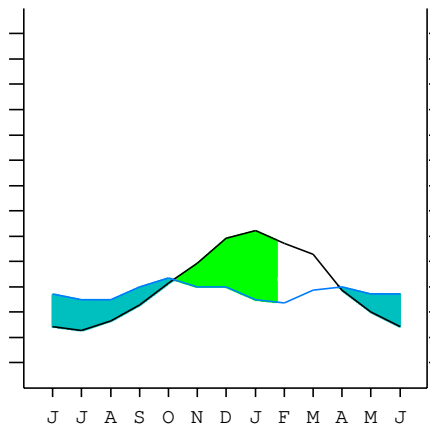
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

ESSENDON (AUSTRALIA)

37°44' S 144°54' E      86 m 90/89 y.

T= 14.7      Ic= 10.3      TEMPERATE HYPEROCEANIC (SUBMEDITERRANEAN)  
 m= 5.6      Tp= 1767      UPPER THERMOTEMPERATE  
 M= 13.3      Tn= 0      LOW SUBHUMID  
 M' = 45.6    Itc= 336  
 m' = -2.8    Io= 3.7  
 P= 653      mm      ———  
 PE= 742     mm      ———

Imbibing	28 Mar.
Saturation	9 Oct.
Reserve Use	7 Oct.
Deficit	21 Jan.



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A3b]  
 + Type .....: A. Hyperoceanic  
 + Subtype .....: 3. Subhyperoceanic  
 + Variant .....: b. Low  
 Thermic types [B1.B4]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 1. Low eutemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 4. Temperate  
 Bioclimatic types [C4b.2a.6b]  
 + Macrobioclimate .....: C. TEMPERATE  
 + Bioclimate .....: 4. HYPEROCEANIC  
 + Bioclimatic variant .: b. SUBMEDITERRANEAN  
 + Thermic type.....: 2. THERMOTEMPERATE  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 6. SUBHUMID  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....: Texe (Sbm).Tte.Shu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 325  
 Coldest semester of the year.....(Psw): 328  
 Warmest four months period of the year.....(Pcm1): 208  
 Following warmest four months period.....(Pcm2): 213  
 Positive precipitation dryest 3 months.....(Ppd): 150  
 Positive precipitation dryest 2 months.....(Ppd2): 94  
 Positive precipitation dryest 1 month.....(Ppd1): 46  
 Positive precipitation warmest 3 months.....(Pps): 150  
 Positive precipitation warmest 2 months.....(Pps2): 94  
 Positive precipitation warmest 1 month.....(Pps1): 48  
 Positive precipitation coldest 3 months.....(Ppw): 150  
 Positive precipitation coldest 2 months.....(Ppw2): 102  
 Positive precipitation coldest 1 month.....(Ppw1): 48

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	149	182	152	167

Seasonal rainfall rhythms: P > F > S > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 19.7  
 Average coldest month [T].....(Tmin): 9.4  
 Maximum temp. warmest month [M].....(Tmmax): 25.6  
 Minimum temp. coldest month [m].....(Tmmin): 5.6  
 Absolute Max.temp. warmest month [M'].....(Tamax): 45.6  
 Absolute Min.temp. coldest month [m'].....(Tamin): -2.8  
 First warmest contrasted month [M].....(Tcmax): 25.6 (1)  
 First coldest contrasted month [m].....(Tcmin): 13.9 (1)  
 Estival temperature.....(Ts): 575  
 Positive temperature dryest 3 months.....(Tpd): 303  
 Positive temperature dryest 2 months.....(Tpd2): 395  
 Positive temperature dryest 1 month.....(Tpd1): 197  
 Positive temperature warmest 3 months.....(Tps): 578  
 Positive temperature warmest 2 months.....(Tps2): 395  
 Positive temperature warmest 1 month.....(Tps1): 197  
 Positive temperature coldest 3 months.....(Tpw): 303  
 Positive temperature coldest 2 months.....(Tpw2): 197  
 Positive temperature coldest 1 month.....(Tpw1): 95

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SEASONAL PARAMETERS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Warmest semester...(Sms)	o	o	o	o							o	o
Dryest semester....(Smd)	o	o	o	o	o	o						
Warmest 4 months...(Cm1)	o	o	o									o
Dryest 4 months....(Cmd)					o	o	o	o				
Vegetation Activity(Pav)	o	o	o	o	o	o	o	o	o	o	o	o
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)												
Pregelid.....[m' <=0] (Pf)					o	o	o	o	o	o		
Agelid.....[m' > 0] (Pf)	o	o	o	o							o	o
HiperAgelid..[all>0] (Pf)	o	o	o	o							o	o

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.14  
 Mediterranean index of January.....(Im1): 2.25  
 Mediterranean index of January & February.....(Im2): 2.14  
 Mediterranean index of December to February...(Im3): 1.96

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	584	483	457	559	584	533	533	483	483	584	660	584
Tp	181	197	197	183	153	125	103	95	106	125	142	161
Io (Iom)	3.23	2.45	2.32	3.05	3.82	4.26	5.18	5.11	4.57	4.67	4.66	3.62
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	1524 / 575			1676 / 461			1499 / 303			1828 / 428		
Io (Iot)	2.650			3.634			4.949			4.272		
Semesters	December-May						June-November					
Pp(x10)/Tp	3200 / 1036						3327 / 731					
Io (Iosm)	3.088						4.553					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 6527/1767=3.69 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	584	483	457	559	584	533	533	483	483	584	660	584
Tp [T*10]	181	197	197	183	153	125	103	95	106	125	142	161
Iom [Pp/Tp]	323	245	232	305	382	426	518	511	457	467	466	362
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	1524 / 575			1676 / 461			1499 / 303			1828 / 428		
Iot [Pp/Tp]	265			363			495			427		
Avs E [Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 10.28
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	8.16
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	9.62
+ Hyperoceanic (-20<CI<20)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....	0.76
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T] .....	44.32
+ Semiarid (60>R>40)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	26.40
+ Subhumid (30>Ia>20)	
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....	104.87
+ Humid (Q>90)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	2.26
+ Semiarid (3>DR>2)	
Aridity Index of UNEP [I=P/PE] .....	0.88
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....	6.67
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....

- + Climate .....
- + Region .....
- + Thermic type: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.19	0.18	0.23	0.26	0.26	0.27	0.25	0.24	0.28	0.31	0.25	0.24
T-E ratio	8.88	8.88	8.25	6.88	5.63	4.63	4.25	4.75	5.63	6.38	7.25	8.13
Precipitation-effectiveness: 29.65						Temperature-efficiency .....						79.52
Moisture Index [MI=100*(P-PE)/PE] .....												-11.99
+ C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE] .....												12.49
+ No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE] .....												0.50
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												741.59
+ Second mesothermic (712<PE<855)												

